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03/17/03

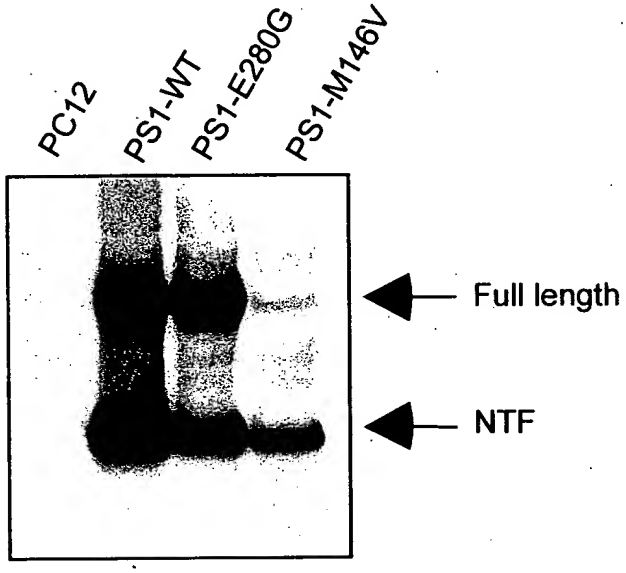

FIG. 1A

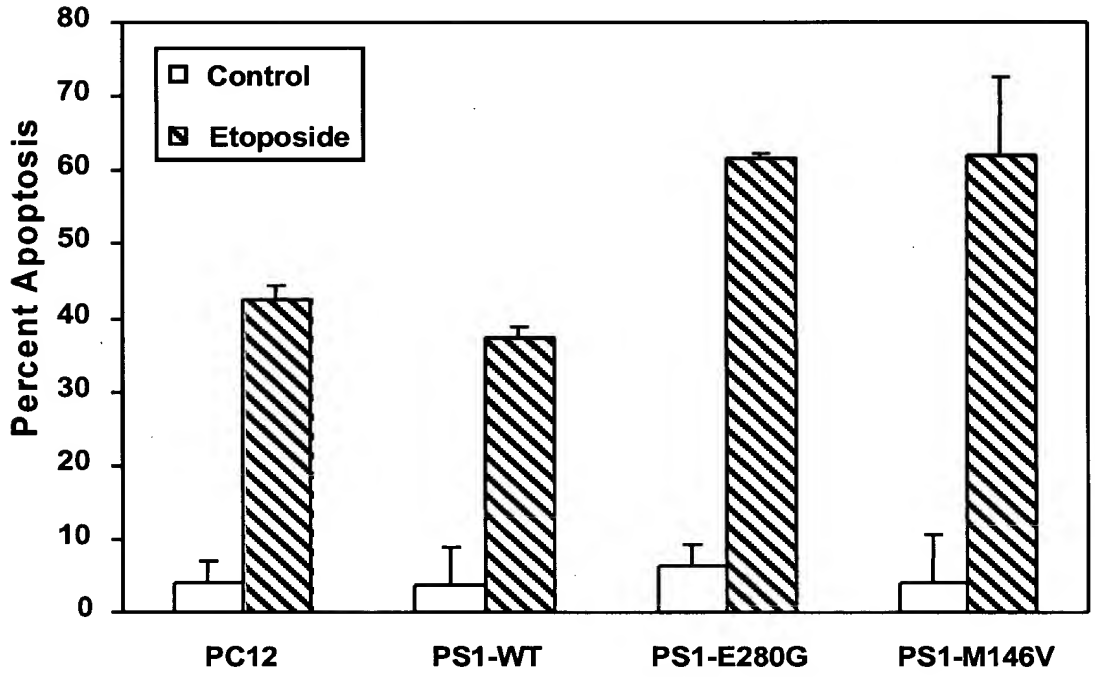
Control
Etoposide
Percent Apoptosis
0
10
20
30
40
50
60
70
80
PC12
PS1-WT
PS1-E280G
PS1-M146V

FIG. 1B

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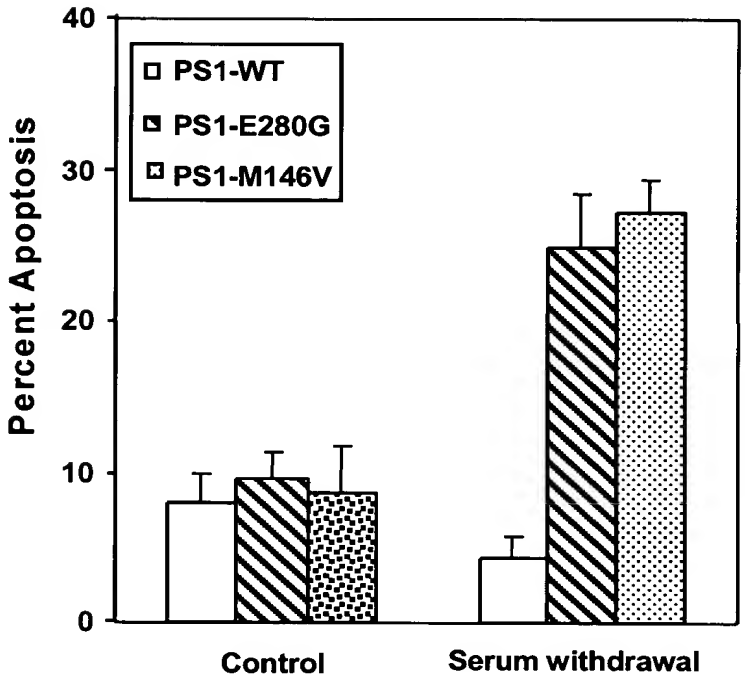

FIG. 1C

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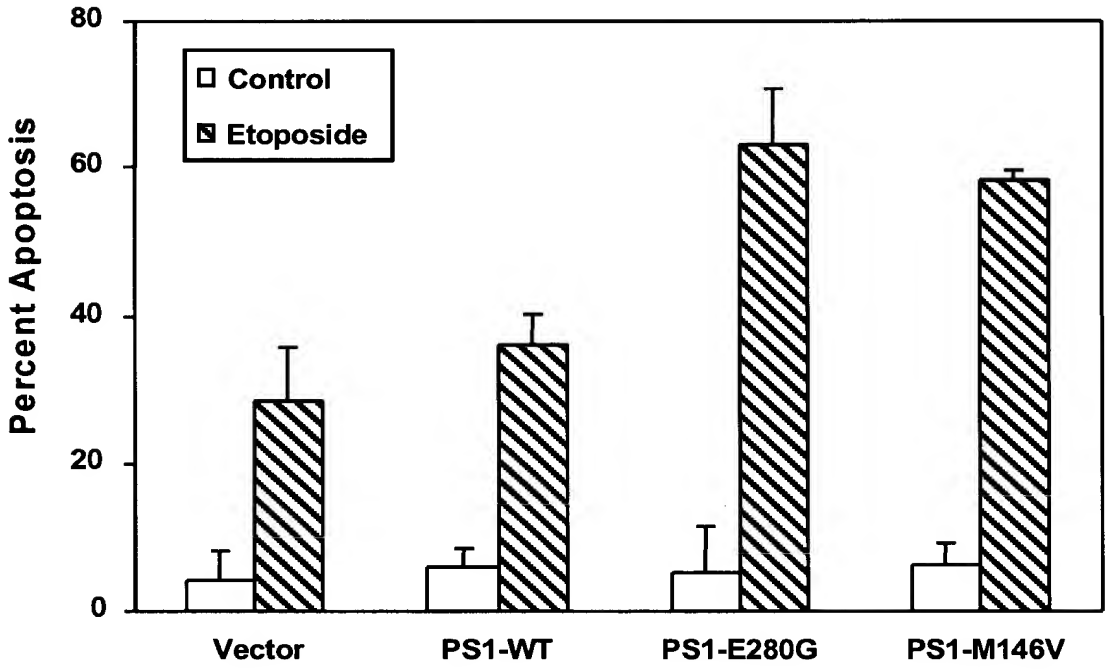

FIG. 1D

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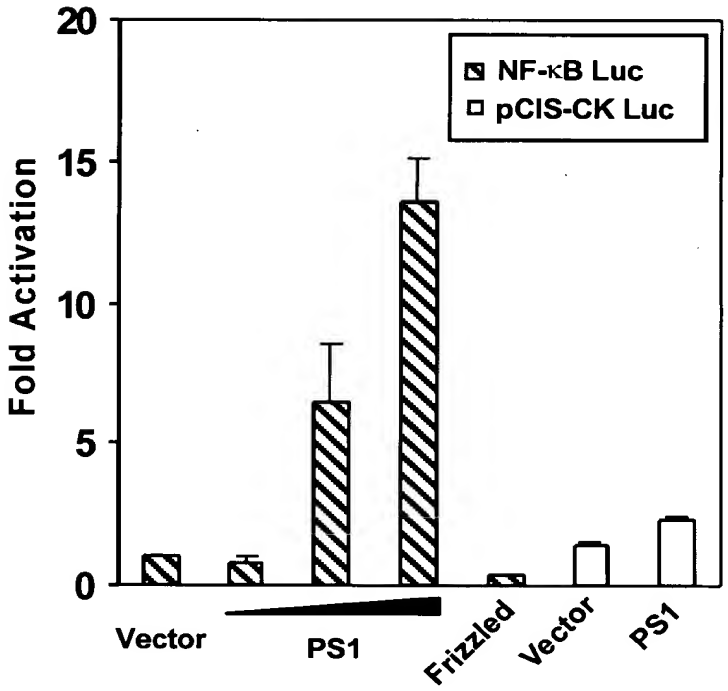

FIG. 2A

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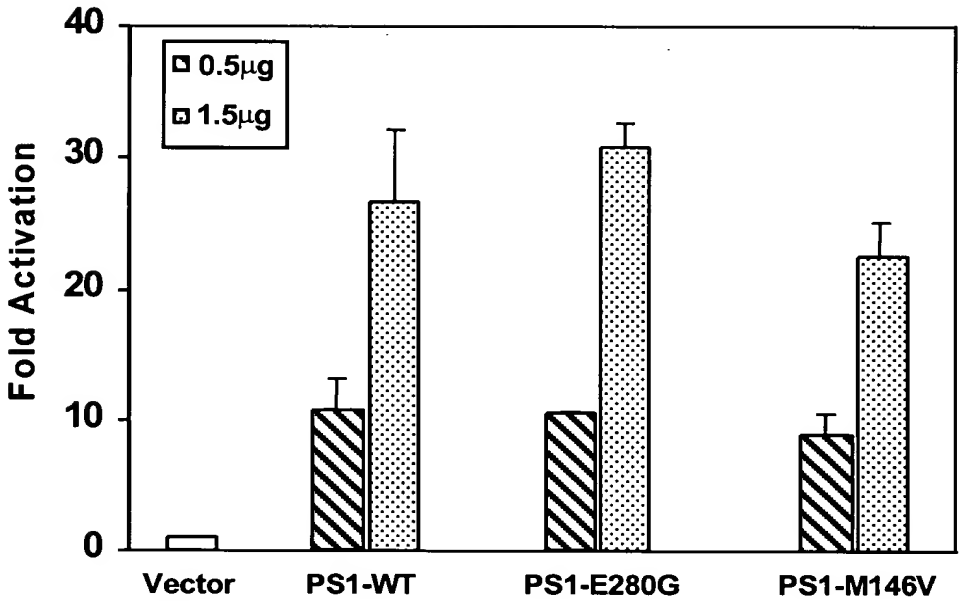

FIG. 2B

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

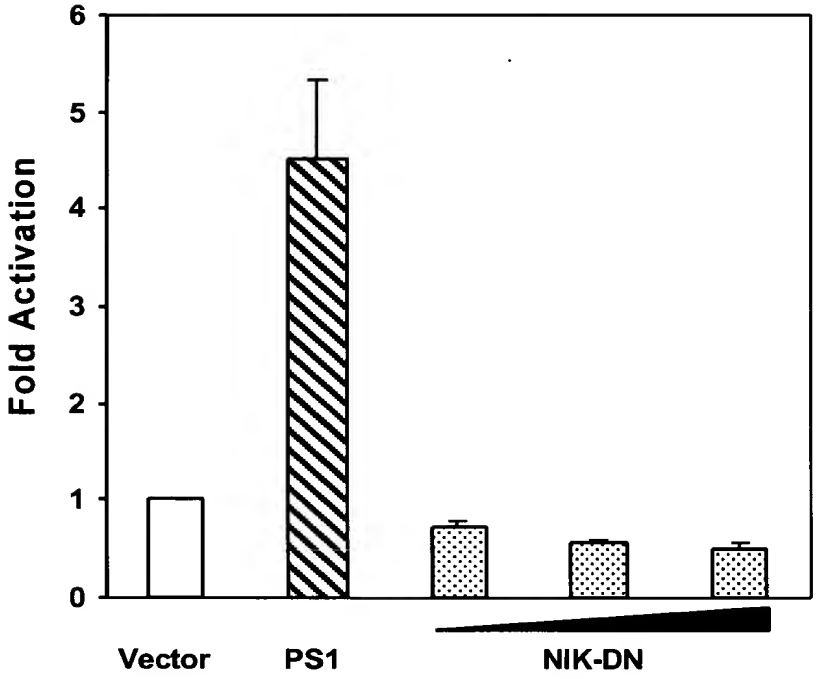

FIG. 3A

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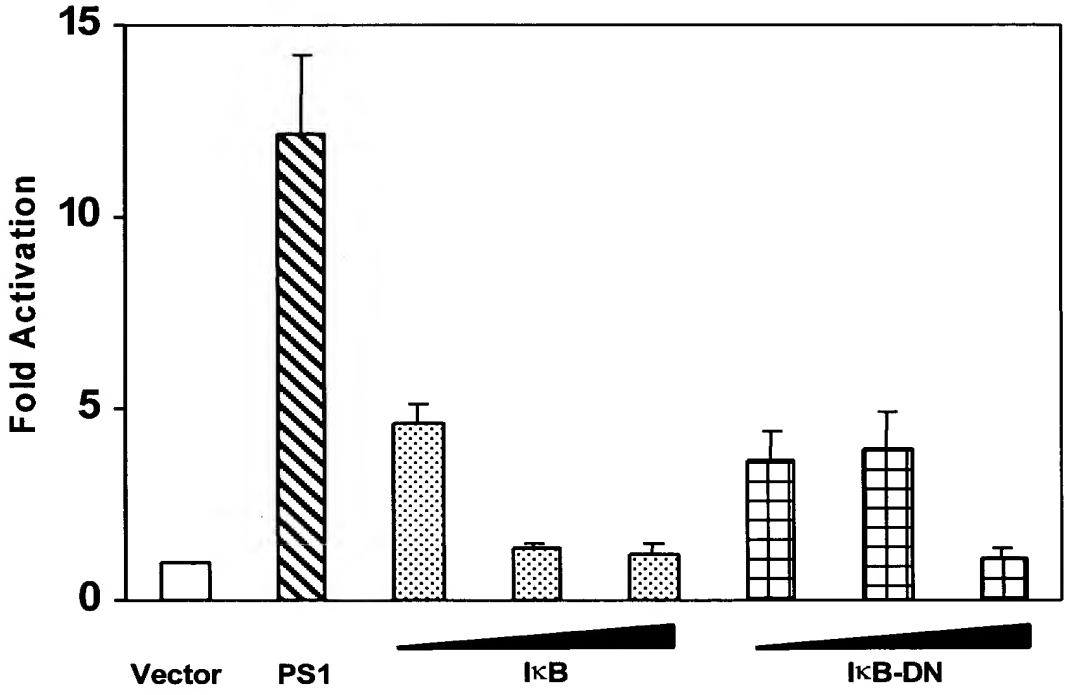

FIG. 3B

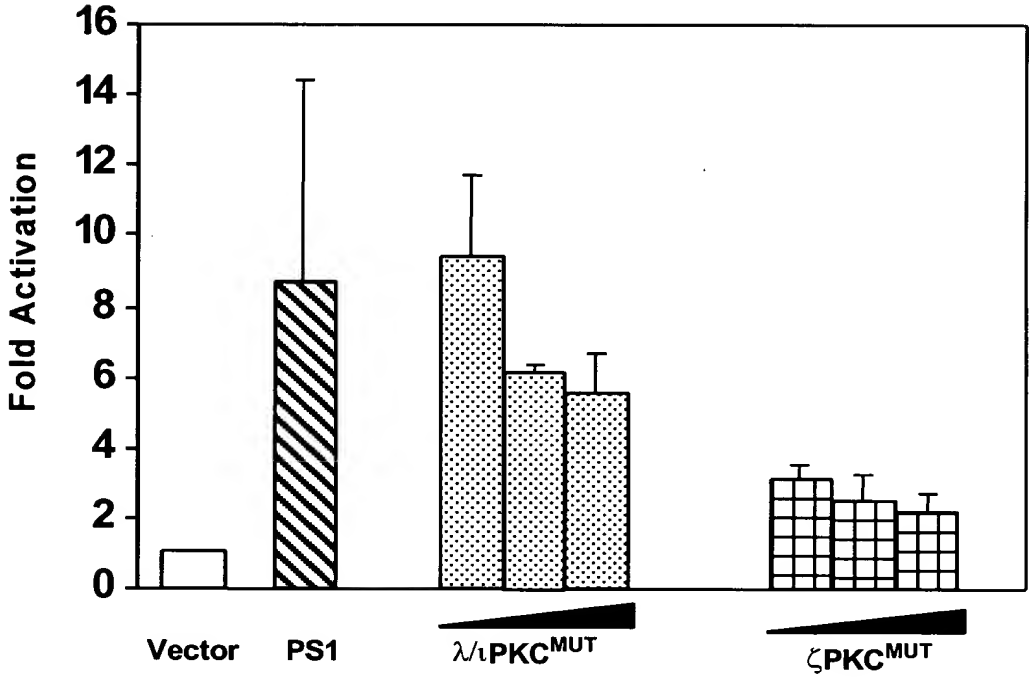
16
14
12
10
8
6
4
2
0
Fold Activation
Vector
PS1
λ/ιPKC^MUT
ζPKC^MUT

FIG. 4A

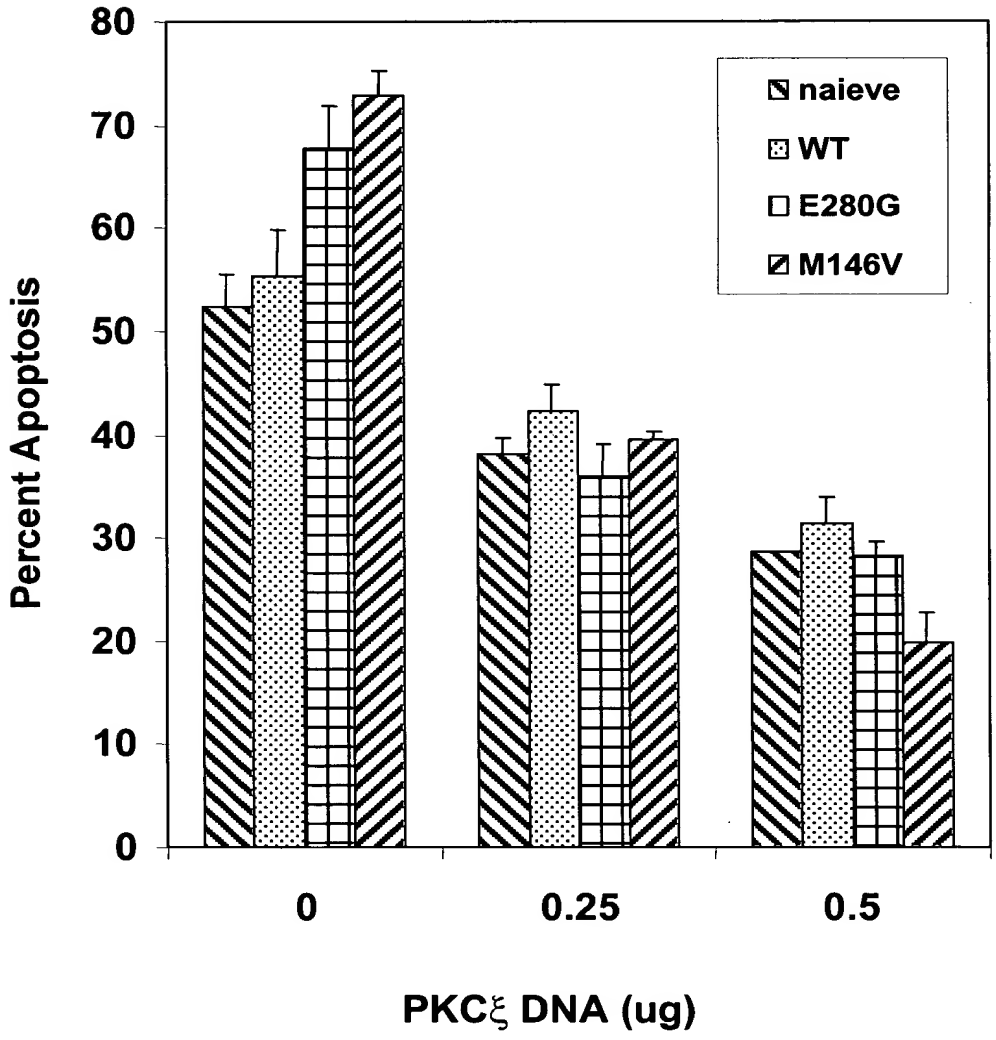
80
70
60
50
40
30
20
10
0
Percent Apoptosis
naieve
WT
E280G
M146V
0
0.25
0.5
PKCξ DNA (ug)

FIG. 4B

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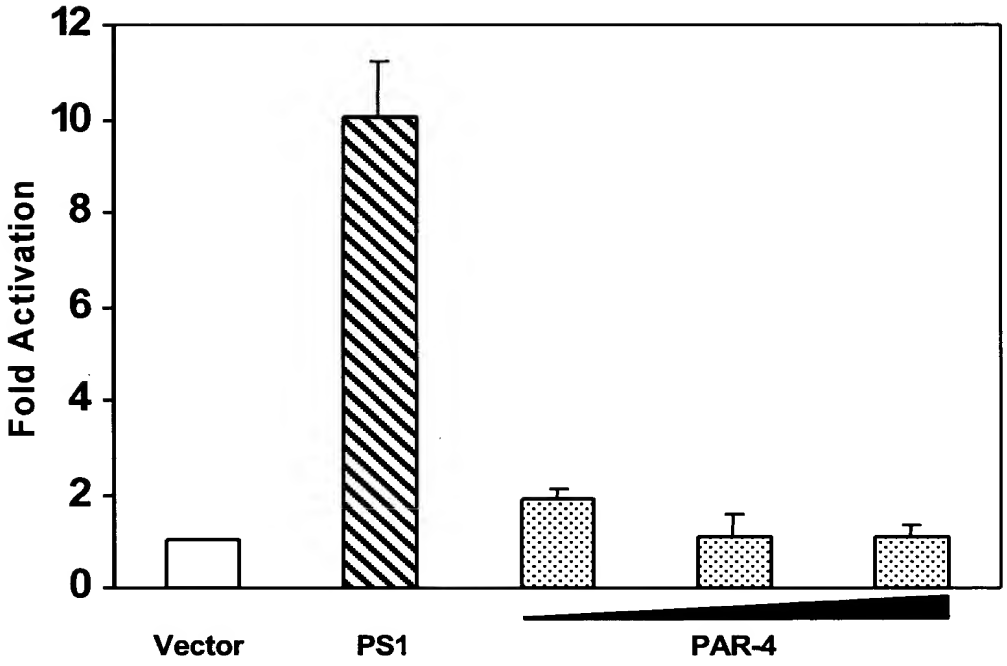

FIG. 4C

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

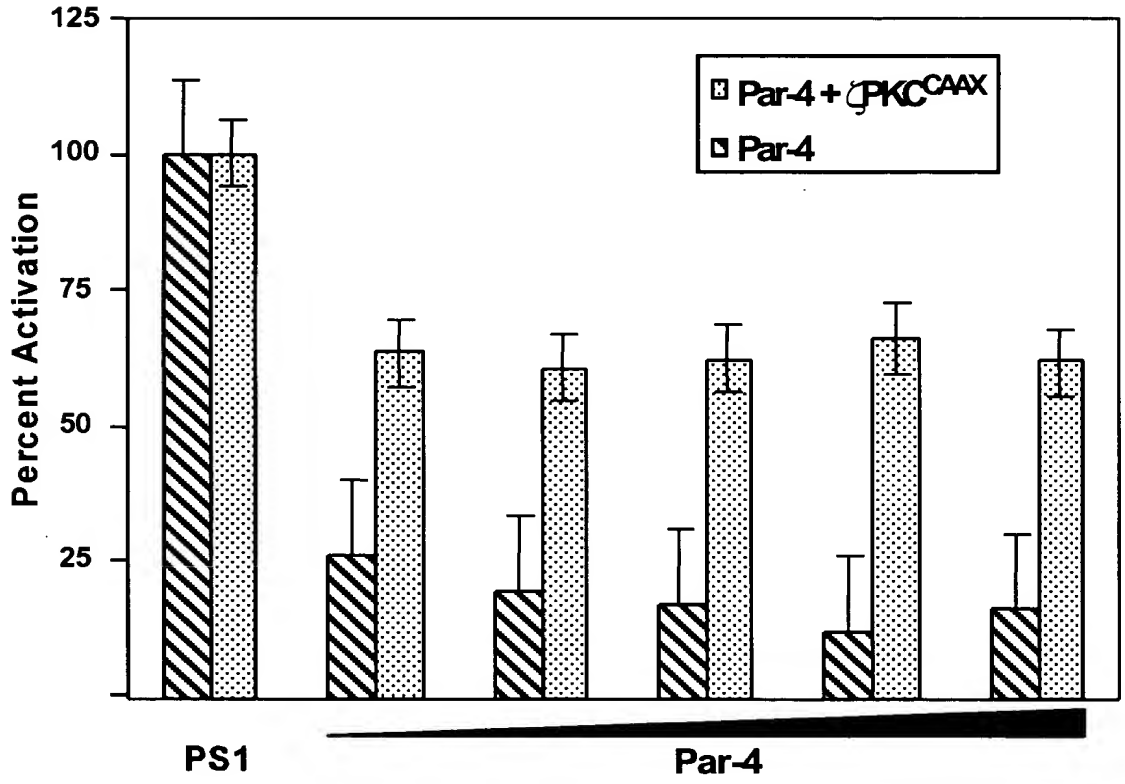

FIG. 4D

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

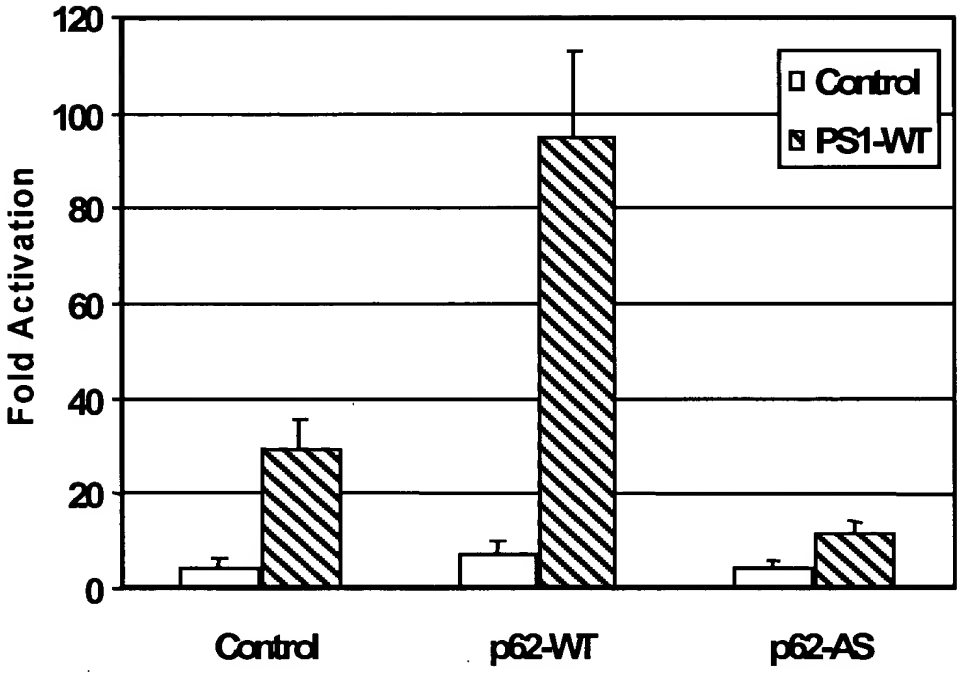

FIG. 4E

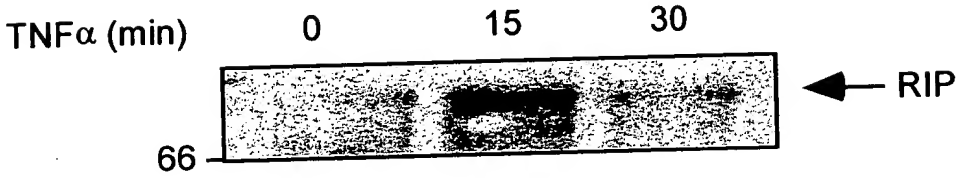

FIG. 5A

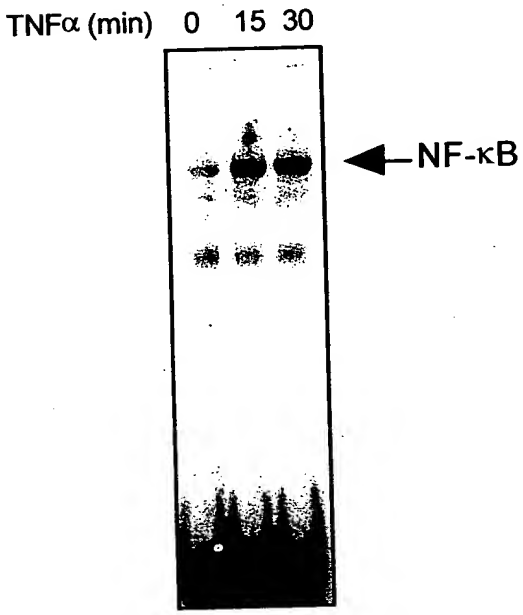

FIG. 5B

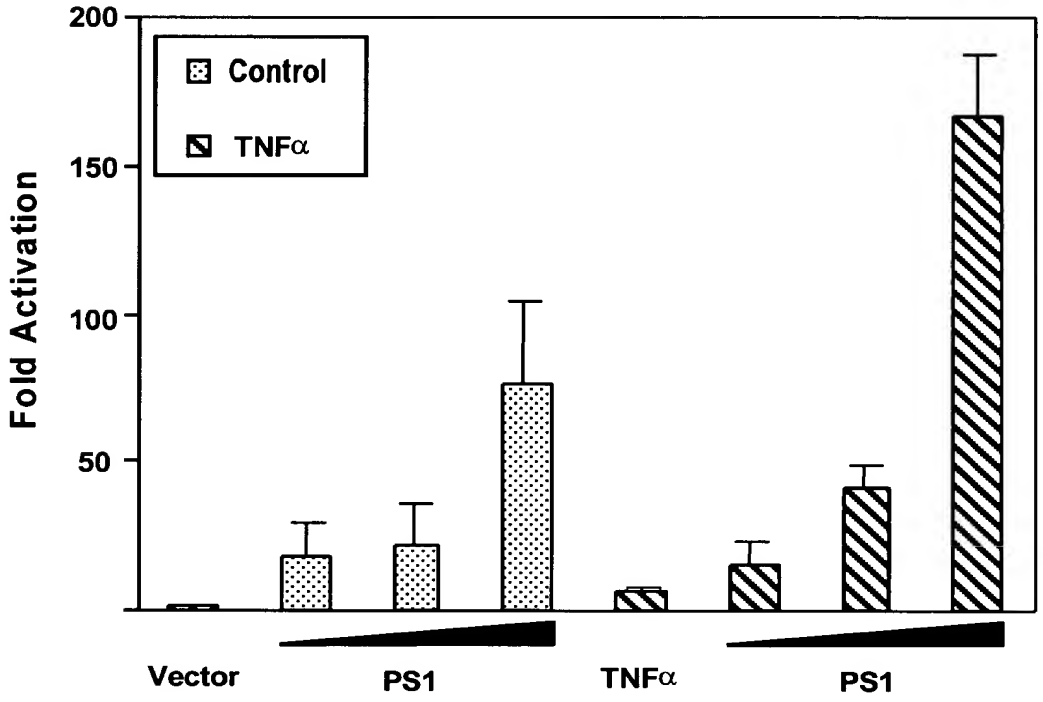
200
150
100
50
Fold Activation
Control
TNFα
Vector
PS1
TNFα
PS1

FIG. 5C

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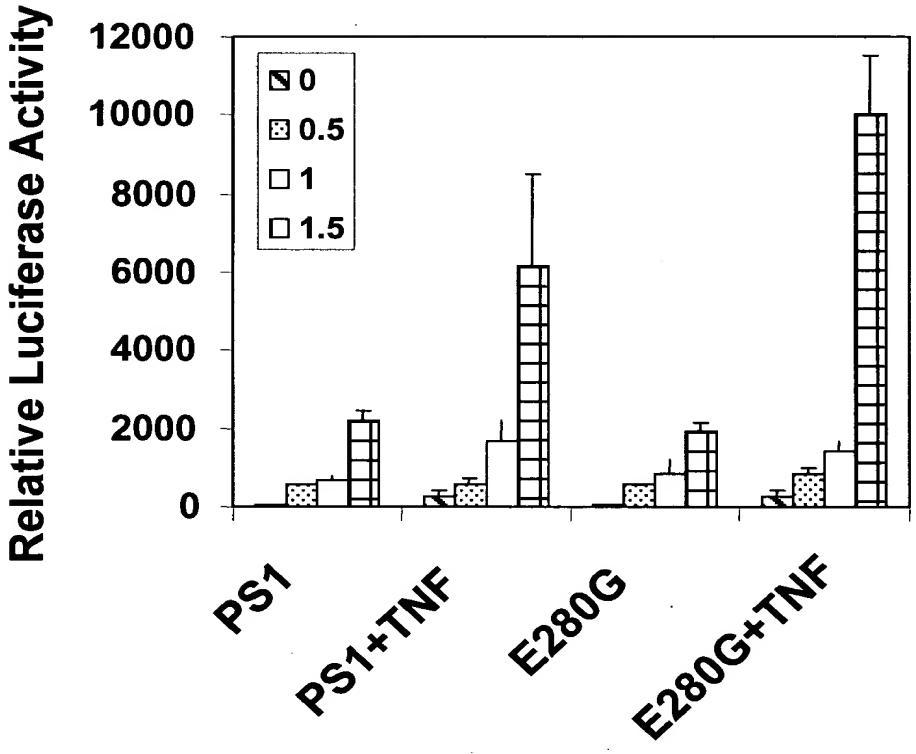

FIG. 5D

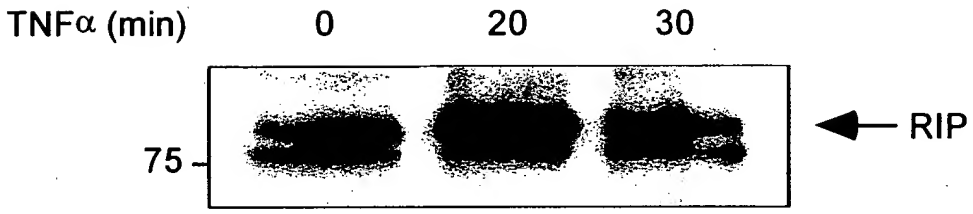

FIG. 6A

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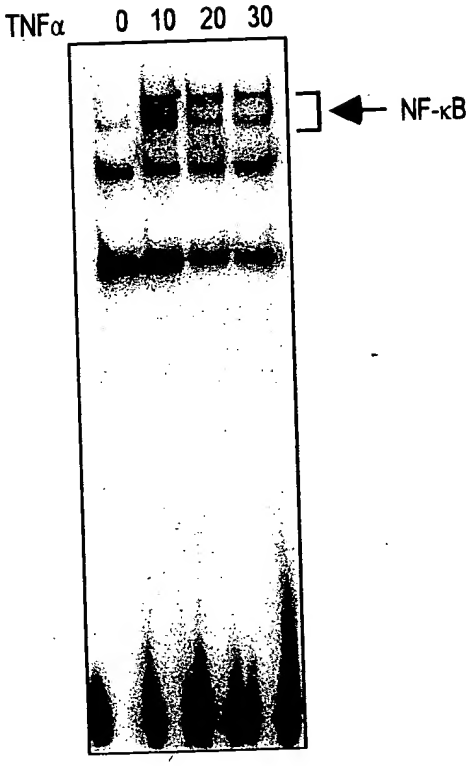

FIG. 6B

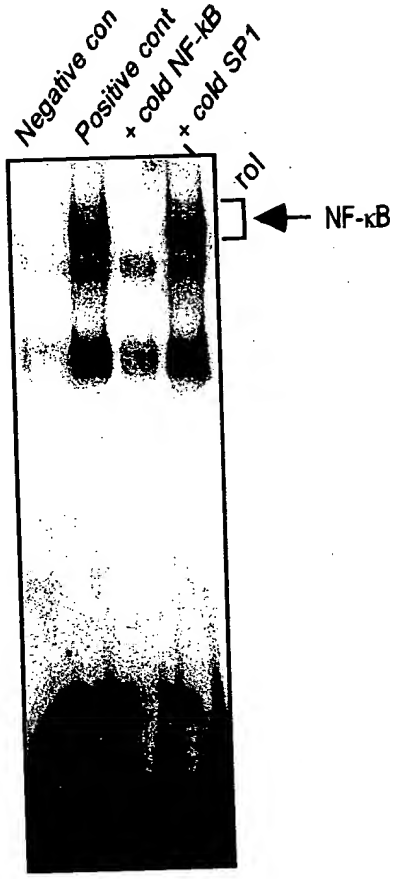

FIG. 6C

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

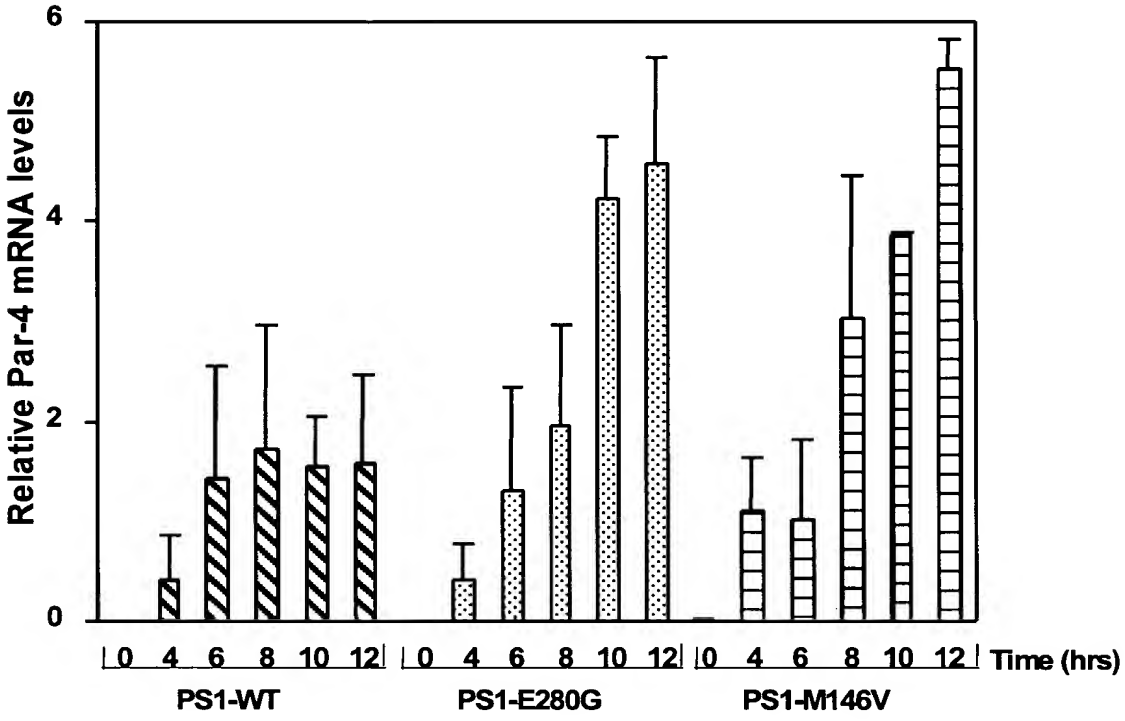

FIG. 7A

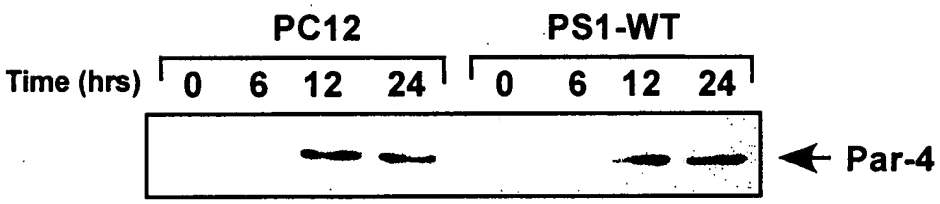
PC12
PS1-WT
Time (hrs)
0 6 12 24
0 6 12 24
Par-4

FIG. 7B

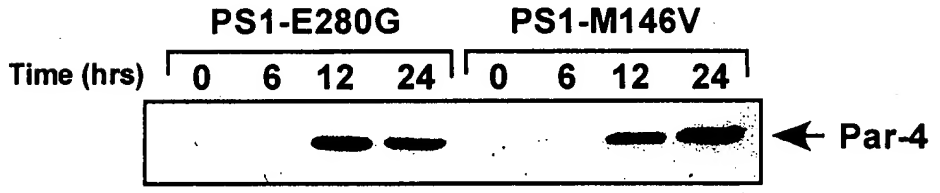
PS1-E280G
PS1-M146V
Time (hrs)
0 6 12 24
0 6 12 24
Par-4

FIG. 7C

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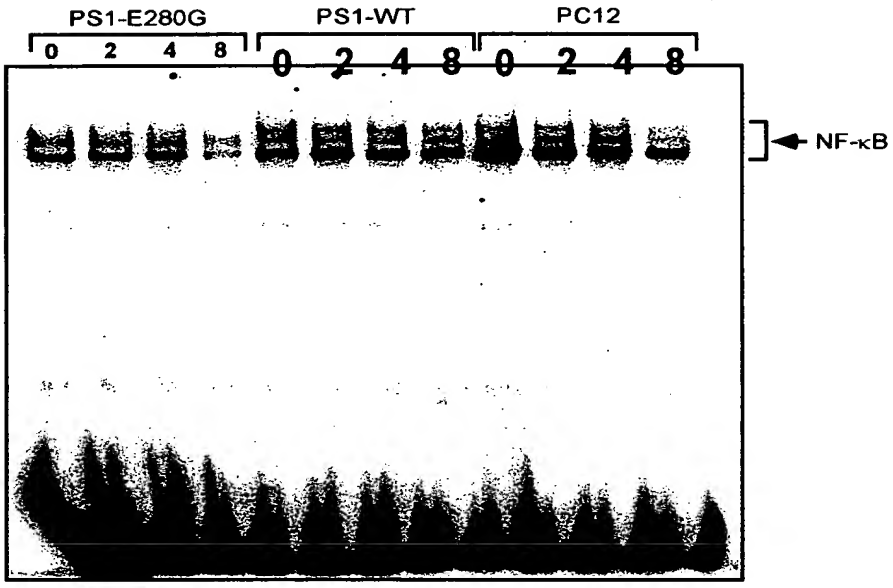

FIG. 8A

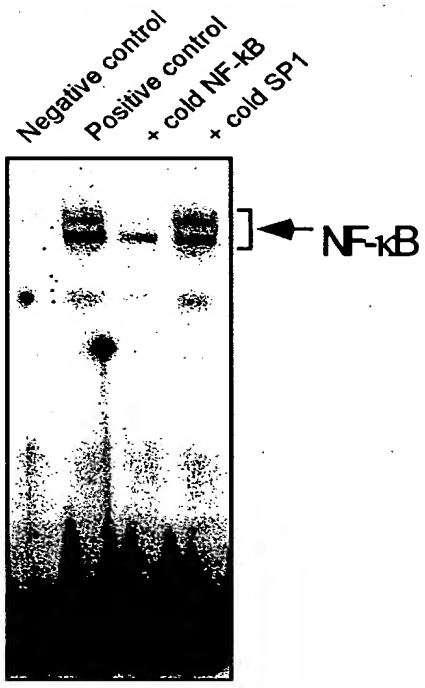

FIG. 8B

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

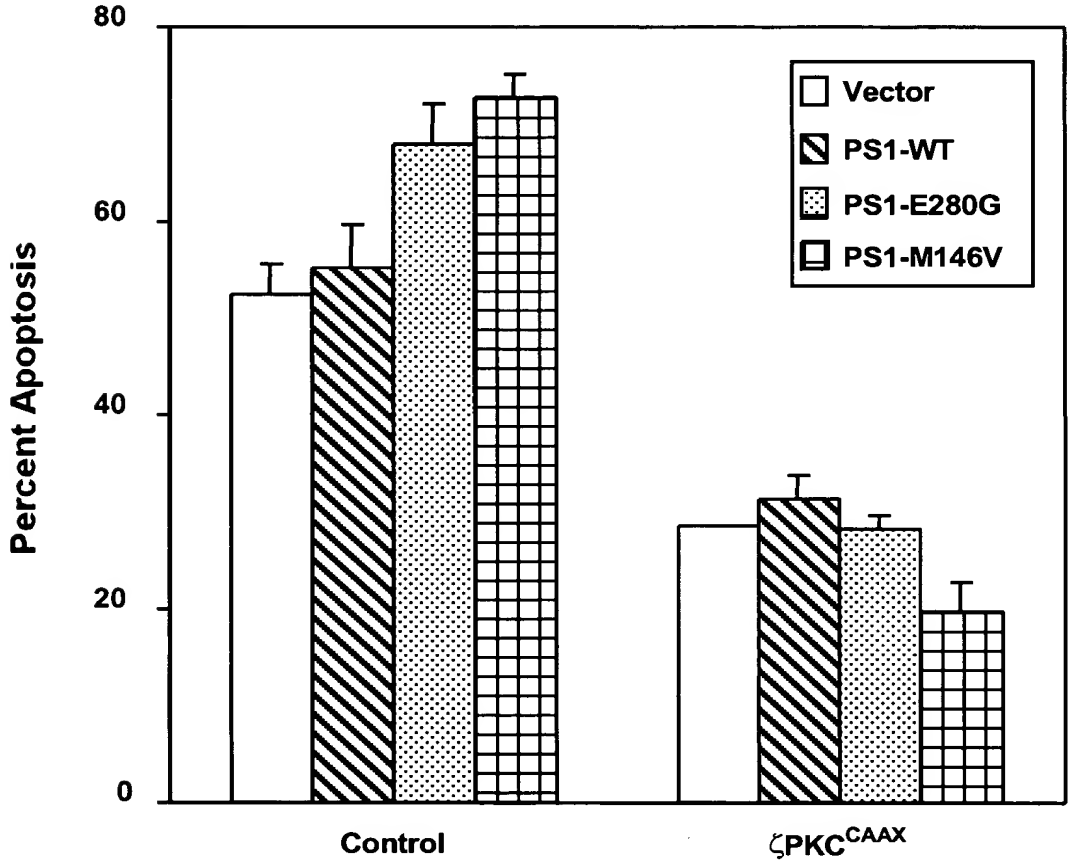

FIG. 9A

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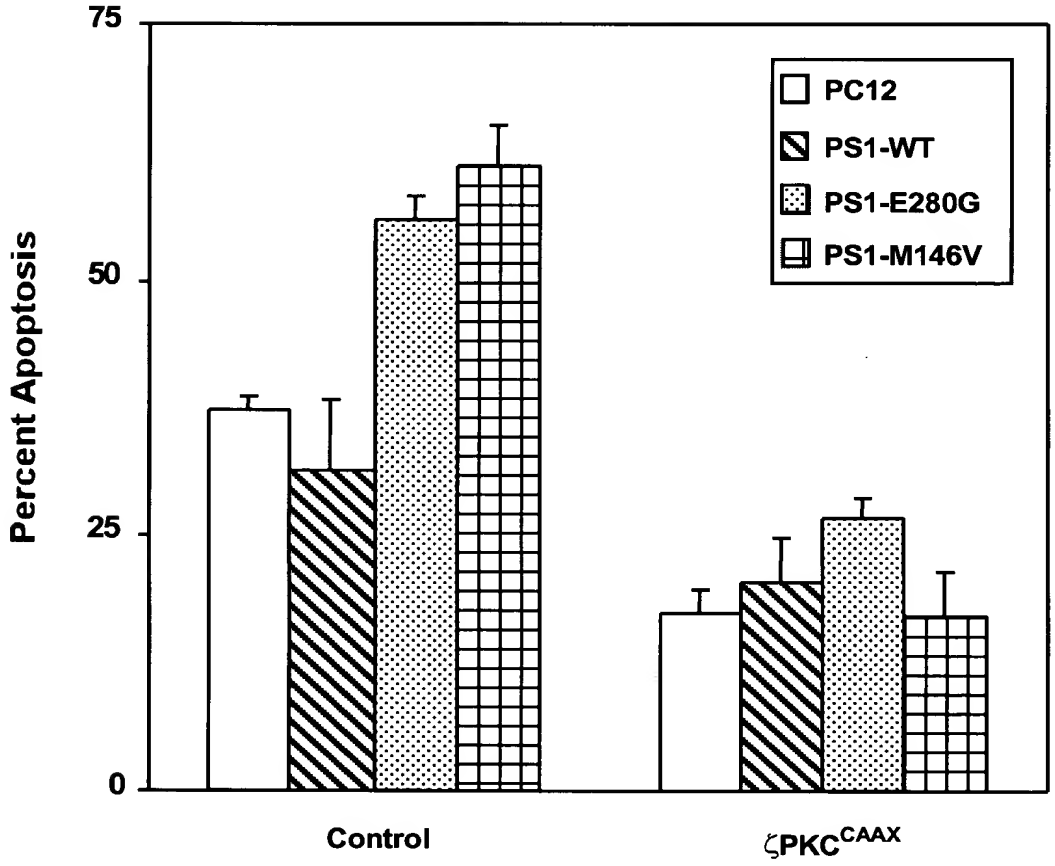

FIG. 9B

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

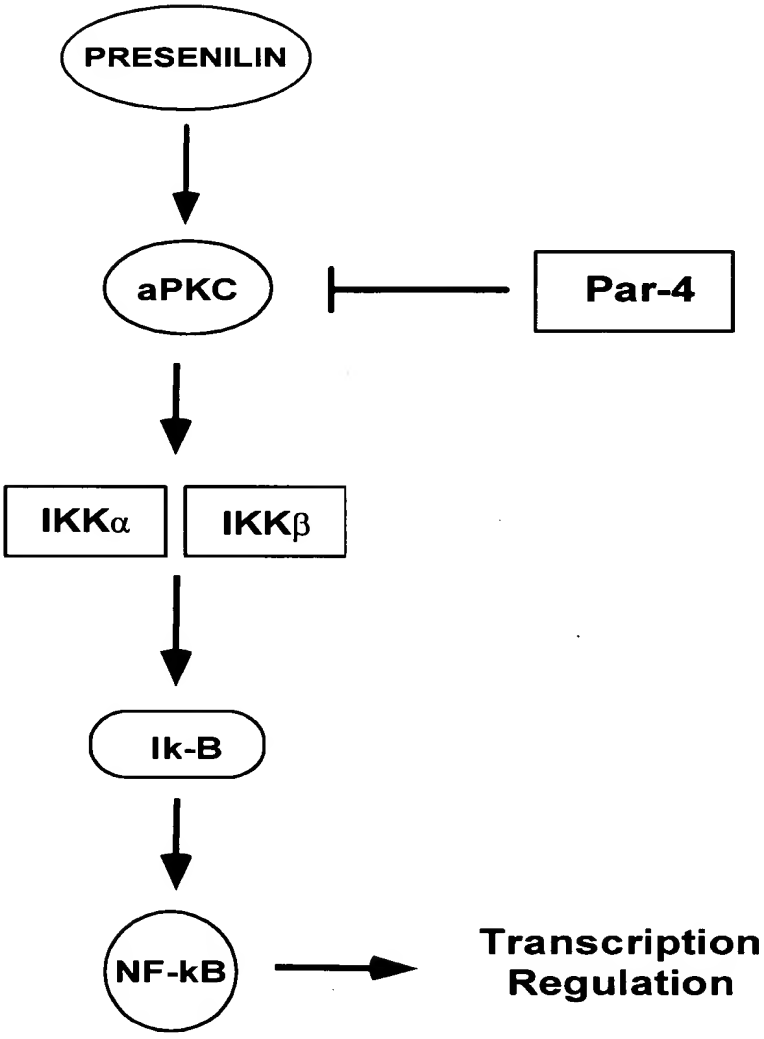

FIG. 10

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ATGCGCGCCAAGCAGAACCCCCCGGGCCCGGCCCCCCCGGGAGGGGGCAGCAGCGACGCCGC
TGGGAAGCCCCCCGCGGGGGCTCTGGGCACCCCGGCGGCCGCCGCTGCCAACGAGCTCAACA
ACAACCTCCCGGGCGGCGCGCCGGCCGCACCTGCCGTCCCCGGTCCCGGGGGCGTGAACTGC
GCGGTCGGCTCCGCCATGCTGACGCGGGCGCCCCCGGCCCGCGGCCCGCGGCGGTCGGAGGA
CGAGCCCCCAGCCGCCTCTGCCTCGGCTGCACCGCCGCCCCAGCGTGACGAGGAGGAGCCGG
ACGGCGTCCCAGAGAAGGGCAAGAGCTCGGGCCCCAGTGCCAGGAAAGGCAAGGGGCAGATC
GAGAAGAGGAAGCTGCGGGAGAAGCGGCGCTCCACCGGCGTGGTCAACATCCCTGCCGCAGA
GTGCTTAGATGAGTACGAAGATGATGAAGCAGGGCAGAAAGAGCGGAAACGAGAAGATGCAA
TTACACAACAGAACACTATTCAGAATGAAGCTGTAAACTTACTAGATCCAGGCAGTTCCTAT
CTGCTACAGGAGCCACCTAGAACAGTTTCAGGCAGATATAAAAGCACAACCAGTGTCTCTGA
AGAAGATGTCTCAAGTAGATATTCTCGAACAGATAGAAGTGGGTTCCCTAGATATAACAGGG
ATGCAAATGTTTCAGGTACTCTGGTTTCAAGTAGCACACTGGAAAAGAAAATTGAAGATCTT
GAAAAGGAAGTAGTAACAGAAAGACAAGAAAACCTAAGACTTGTGAGACTGATGCAAGATAA
AGAGGAAATGATTGGAAAACTCAAAGAAGAAATTGATTTATTAAATAGAGACCTAGATGACA
TAGAAGATGAAAATGAACAGCTAAAGCAGGAAAATAAAACTCTTTTGAAAGTTGTGGGTCAG
CTGACCAGGTAG

FIG. 11A

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MATGGYRTSSGGGSTTDWKAKRKMRAKNGAGGGSSDAAGKAGAGTAAAAANNNNGGAAAAVG
GGVNCAVGSAMTRAARGRRSDAASASAARDDGVKGKSSGSARKGKGKRKRKRRSTGVVNAAC
DYDDAGKRKRDATNTNAVNDGSSYRTVSGRYKSTTSVSDVSSRYSRTDRSGRYNRDANVSGT
VSSSTKKDKVVTRNRVRMDKMGKKDNRDDDDNKNKTKVVGTRMATGGYRTSSGGGSTTDWKA
KRKMRAKNGAGGGSSDAAGKAGAGTAAAAANNNNGGAAAAVGGGVNCAVGSAMTRAARGRRD
AASASAARDDGVKGKSSGSARKGKGKRKRKR

FIG. 11B

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

ATGACAGAGTTACCTGCACCGTTGTCCTACTTCCAGAATGCACAGATGTCTGAG
GACAACCACCTGAGCAATACTGTACGTAGCCAGAATGACAATAGAGAACGGCAG
GAGCACAACGACAGACGGAGCCTTGGCCACCCTGAGCCATTATCTAATGGACGA
CCCCAGGGTAACTCCCGGCAGGTGGTGGAGCAAGATGAGGAAGAAGATGAGGAG
CTGACATTGAAATATGGCGCCAAGCATGTGATCATGCTCTTTGTCCCTGTGACT
CTCTGCATGGTGGTGGTCGTGGCTACCATTAAGTCAGTCAGCTTTTATACCCGG
AAGGATGGGCAGCTAATCTATACCCCATTCACAGAAGATACCGAGACTGTGGGC
CAGAGAGCCCTGCACTCAATTCTGAATGCTGCCATCATGATCAGTGTCATTGTT
GTCATGACTATCCTCCTGGTGGTTCTGTATAAATACAGGTGCTATAAGGTCATC
CATGCCTGGCTTATTATATCATCTCTATTGTTGCTGTTCTTTTTTTCATTCATT
TACTTGGGGGAAGTGTTTAAAACCTATAACGTTGCTGTGGACTACATTACTGTT
GCACTCCTGATCTGGAATTTTGGTGTGGTGGGAATGATTTCCATTCACTGGAAA
GGTCCACTTCGACTCCAGCAGGCATATCTCATTATGATTAGTGCCCTCATGGCC
CTGGTGTTTATCAAGTACCTCCCTGAATGGACTGCGTGGCTCATCTTGGCTGTG
ATTTCAGTATATGATTTAGTGGCTGTTTTGTGTCCGAAAGGTCCACTTCGTATG
CTGGTTGAAACAGCTCAGGAGAGAAATGAAACGCTTTTTCCAGCTCTCATTTAC
TCCTCAACAATGGTGTGGTTGGTGAATATGGCAGAAGGAGACCCGGAAGCTCAA
AGGAGAGTATCCAAAAATTCCAAGTATAATGCAGAAAGCACAGAAAGGGAGTCA
CAAGACACTGTTGCAGAGAATGATGATGGCGGGTTCAGTGAGGAATGGGAAGCC
CAGAGGGACAGTCATCTAGGGCCTCATCGCTCTACACCTGAGTCACGAGCTGCT
GTCCAGGAACTTTCCAGCAGTATCCTCGCTGGTGAAGACCCAGAGGAAAGGGGA
GTAAAACTTGGATTGGGAGATTTCATTTTCTACAGTGTTCTGGTTGGTAAAGCC
TCAGCAACAGCCAGTGGAGACTGGAACACAACCATAGCCTGTTTCGTAGCCATA
TTAATTGGTTTGTGCCTTACATTATTACTCCTTGCCATTTTCAAGAAAGCATTG
CCAGCTCTTCCAATCTCCATCACCTTTGGGCTTGTTTTCTACTTTGCCACAGAT
TATCTTGTACAGCCTTTTATGGACCAATTAGCATTCCATCAATTTTATATCTAG

FIG. 12A

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MTELPAPLSYFQNAQMSEDNHLSNTVRSQNDNRERQEHNDRRSLGHPEPLSNGRPQGNSRQV
VEQDEEEDEELTLKYGAKHVIMLFVPVTLCMVVVVATIKSVSFYTRKDGQLIYTPFTEDTET
VGQRALHSILNAAIMISVIVVMTILLVVLYKYRCYKVIHAWLIISSLLLLFFFSFIYLGEVF
KTYNVAVDYITVALLIWNFGVVGMISIHWKGPLRLQQAYLIMISALMALVFIKYLPEWTAWL
ILAVISVYDLVAVLCPKGPLRMLVETAQERNETLFPALIYSSTMVWLVNMAEGDPEAQRRVS
KNSKYNAESTERESQDTVAENDDGGFSEEWEAQRDSHLGPHRSTPESRAAVQELSSSILAGE
DPEERGVKLGLGDFIFYSVLVGKASATASGDWNTTIACFVAILIGLCLTLLLLAIFKKALPA
LPISITFGLVFYFATDYLVQPFMDQLAFHQFYI

FIG. 12B

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ATGCTCACATTCATGGCCTCTGACAGCGAGGAAGAAGTGTGTGATGAGCGGACGTCCCTAAT
GTCGGCCGAGAGCCCCACGCCGCGCTCCTGCCAGGAGGGCAGGCAGGGCCCAGAGGATGGAG
AGAACACTGCCCAGTGGAGAAGCCAGGAGAACGAGGAGGACGGTGAGGAGGACCCTGACCGC
TATGTCTGTAGTGGGGTTCCCGGGCGGCCGCCAGGCCTGGAGGAAGAGCTGACCCTCAAATA
CGGAGCGAAGCACGTGATCATGCTGTTTGTGCCTGTCACTCTGTGCATGATCGTGGTGGTAG
CCACCATCAAGTCTGTGCGCTTCTACACAGAGAAGAATGGACAGCTCATCTACACGACATTC
ACTGAGGACACACCCTCGGTGGGCCAGCGCCTCCTCAACTCCGTGCTGAACACCCTCATCAT
GATCAGCGTCATCGTGGTTATGACCATCTTCTTGGTGGTGCTCTACAAGTACCGCTGCTACA
AGTTCATCCATGGCTGGTTGATCATGTCTTCACTGATGCTGCTGTTCCTCTTCACCTATATC
TACCTTGGGGAAGTGCTCAAGACCTACAATGTGGCCATGGACTACCCCACCCTCTTGCTGAC
TGTCTGGAACTTCGGGGCAGTGGGCATGGTGTGCATCCACTGGAAGGGCCCTCTGGTGCTGC
AGCAGGCCTACCTCATCATGATCAGTGCGCTCATGGCCCTAGTGTTCATCAAGTACCTCCCA
GAGTGGTCCGCGTGGGTCATCCTGGGCGCCATCTCTGTGTATGATCTCGTGGCTGTGCTGTG
TCCCAAAGGGCCTCTGAGAATGCTGGTAGAAACTGCCCAGGAGAGAAATGAGCCCATATTCC
CTGCCCTGATATACTCATCTGCCATGGTGTGGACGGTTGGCATGGCGAAGCTGGACCCCTCC
TCTCAGGGTGCCCTCCAGCTCCCCTACGACCCGGAGATGGAAGAAGACTCCTATGACAGTTT
TGGGGAGCCTTCATACCCCGAAGTCTTTGAGCCTCCCTTGACTGGCTACCCAGGGGAGGGCT
GGAGGAAGAGGAGGAAAGGGGCGTGAAGCTTGGCCTCGGGGACTTCATCTTCTACAGTGTGC
TGGTGGGCAAGGCGGCTGCCACGGGCAGCGGGGACTGGAATACCACGCTGGCCTGCTTCGTG
GCCATCCTCATTGGCTTGTGTCTGACCCTCCTGCTGCTTGCTGTGTTCAAGAAGGCGCTGCC
CGCCCTCCCCATCTCCATCACGTTCGGGCTCATCTTTTACTTCTCCACGGACAACCTGGTGC
GGCCGTTCATGGACACCCTGGCCTCCCATCAGCTCTACATCTGA

FIG. 13A

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MLTFMASDSEEEVCDERTSLMSAESPTPRSCQEGRQGPEDGENTAQWRSQENEEDGEEDPDR
YVCSGVPGRPPGLEEELTLKYGAKHVIMLFVPVTLCMIVVVATIKSVRFYTEKNGQLIYTTF
TEDTPSVGQRLLNSVLNTLIMISVIVVMTIFLVVLYKYRCYKFIHGWLIMSSLMLLFLFTYI
YLGEVLKTYNVAMDYPTLLLTVWNFGAVGMVCIHWKGPLVLQQAYLIMISALMALVFIKYLP
EWSAWVILGAISVYDLVAVLCPKGPLRMLVETAQERNEPIFPALIYSSAMVWTVGMAKLDPS
SQGALQLPYDPEMEEDSYDSFGEPSYPEVFEPPLTGYPGEELEEEEERGVKLGLGDFIFYSV
LVGKAAATGSGDWNTTLACFVAILIGLCLTLLLLAVFKKALPALPISITFGLIFYFSTDNLV
RPFMDTLASHQLYI

FIG. 13B

OIPE JC10 MAR 17 2003 PATENT & TRADEMARK OFFICE

GAATTCGGCACGAGGGGCGCCGCTCGGCTCCCTTCCCGCCCCTGGCTCCCTCCCTCCCTCCCTC
CCTCCTTCTTCTCCCTCCCTCCTGTCCTGGGATTGCCTGGAGCTCCGCACCGCGAGTTTGCCGC
GGCACTTTCCGCGCGGCGGAAGAGCGCGCGCCAGCTTCGGCACACCTGGGAGCCGGATCCCAGC
CCTACGCCTCGTCCCCTACAAGCTCCTCCAAGCCCCGCCGGCTGCTGTGGGAGCGGCGGCCGTC
CCTCTCCTGGAGGTCGTCTCCTGGCATCCTCGGGGCCGCAGGAAGGAAGAGGAGGCAGCGGCCG
GAGCCCTGGTGGGCGGCCTGAGGTGAGAGCCCGACCGGCCCCTTTGGGAAT

FIG. 14

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GAATTCCAGAAGGCAGGAACAGAGAAAGTAGAAGGAAAGTCTTATAAAAGAAAGAGAATAGGCC
AGGCACGGTGGCTCACGCCTCTAATCCCAGCATTTTGGGAGGCTGAGGCAGGTGGATCATGAGG
TCAGGAGTTCAAGACCAACCTGACCAACATGGTGAAGCCCCGTCTCTACTAAAAATACAAAAAT
TAACCAGGCGTGTGTGCCTGTAATCCCAGCTACTCAGGAGGCTGAGGCAGGAGAATCGCTTGAA
CCCGAAAGGTGAAGGTTGCTGTGAGCCTAGATCAGGCCACTGCACTCTGACCTGGGCGACAGAG
CGAGACTCCATGTCAAAGAAAAAGAAAGAGGATAAGAAAATTTCCTAACTGGAAGGCAGATAGC
TGATTAAAAGGGTCCACTGACTGCATAACATAATAATGATAAAAGACCAAATCAGAGCATATCT
TCAAGATATTTCAGAGGATCTAAGTAAGAAGATCCAAAAATTTTGAGACAGAAAATACAATGCA
ATCAGAATGCCACTGGTCTTCTAAACAGCAACTCTGGAAACTAGATGATAATAAAGCAATGCCT
TCAAAATTATGAAGGAAAATGCTTTCTAACCTAGAGTTCTATGCTCCACCAAACTATTAATCAA
GTATGAAGATAAATTTAAAACATTTTCCAATATGCAAGGTCTCTAAGAATGAGTTATACTATCT
TCAGAATATACTGAGGATATACTCTGCTAAAATGAAGGGGAGAAACAAAAAGAGAAAAGTATGC
AATTCAGGAAACAAGAAGTCTACAGAGAAAATGATTCTCAAGGTGTTAGAGGAGCATAATCCCA
GGATGACCACAAGCAACGAGCCTTAAAATCAGTCCAGATTAGGCCAGGTGCGGTGGCTCACACC
TGTAATCCCAGCACTTTGGGAGGCCAAAGCAGGCTGGTTGCCTGAGCTCAGAAGTTCGAGACCA
GTCTGGGCAACATGGTGAAACCCCCGTCTCTACTAAAATACAAAAAATTAGCTGGGCGTGGTGG
CATGTGCCTGTATTCCCAGCTACTCTGGAGGCTGATGCAGGAGAATTGCTTGAACCCAGGAGGC
GGAGGTTGCAGTGAGCCAAGACTGCGCCACTGCACTACAGCCTCACCAACAGAGCGAGACTCCG
TCTCCAAACAAACAAACAAAATCAATCCATATTAAAGCAGGGGATGGAGGGCTCCAGAACAGAT
GTTTCCAAAAAGAGAATAGAACTGATAGCTTACCCAATGTGATTAACGTCATTGAGAGGAGGAA
AATTTGAGTATATACTTGTGACTGGTATATAAAAAAATAAGCCGATGATTAAAGAAAAAAAAAG
AGGCAAGTTTTAACTGCAGAAAAATGGTAAAGACAAAAGGTATAGTTGTGCAACAAGGAAAAAC
AGTTGTAAAAAAAAAGAAATGCAATCATATACACCACATGACTCAGCTATGAACAGTATTTGTA
TAGTCATAATACTACGGGCGTGTAGGAGTATGAAAAGTATATGTGTGGCCGGGCATGGTGGCTC
ATGCCTGTAATCCCAGAACTTTGGGAGGCCGAGGCGGGTGGATCACGAGGTCAGGAGATCGAGA
TCATCCTGGCTAACACAGTGAAACCCCGTCTCTACTAAAAATGCAAAAAAAAAAAAAAAAAAAA
AAAAAAATTAGCCGGGCGTGGTGGCAGCCACCTGTAGTCCCAGCTACTCAGGAGGCTGAGGCAG
GAGAATGGCGTGAACCCGGGAGGCGGAGCTTGCAGTGAGCCGAGATCGCGCCACTGCACTCCAG
CCTGGGAGACAGAGCGAGACTCCATCTCAAAAAAAAAAGAAAAAAAAAAGAAAAAGAAAAGAAAA
GTATATGTGTTATTAGTGTATTAGAGCTAAATCCTCTTCTATATCTAAAAATGGAAAAATCAAG
ATGTACAATAGCAGATATGCACATAAAAAATAAATATGAAGATCTCTATTAATGGAACCAGTTA
AAAAGTTCAAAGTTTTGGGTAGGGTTTTCAGAATGGATAAGGTAGAGAGGGGATTGCTGTTTTT
TGTTATAATCCTTGTAGAACTAAAGTATGTAATTTTTTTATCCTATGCACATATAATATTTTGA
TGTTAGAGGATGAATTGCATATGTTCCAGAAATACCTGCATTGAAGGCAAAATGGCTACTTCCC
AATACACTAGCTATCCATACATATAATAATACACTTCCTCAAAATCATTAAGACTAACATCTAG
GTTTCACTCTGACATATTTAAATGAATCTGTTTTTGTCAGCATTATCATCATATTTCATTTTAT
TATTAAGGGCAAGTGAGTCGCTAAAAATTGGTTATTTTAGGCTAACTCAGAGGTGCTCAACCGG
GGAAGAATTTTATCCCAGGGACCATGTGGCAATGTCACAATACAGGTGGGGGTTTCTTATTGGT
ATCTAATAGGTAGAAGCCAACGATGCTGCTAAACAACCTACAATGGGCAGGACAGCAAAGAATT
ATCCAGCCCCAAATGTAACAGTGCTGAGGTTGAGAAACCAAGCTCCAAGTCTTTGAGGATTATT
TCATCAGAACGCTATACATAAAGATTGATGATATGCAAACATCTTGCAATTTAGGACTGACTCA
GCTAAATACCTCGGTGCAATGTTGGAAGCAGTCTGGCTGTGAAATATATCTTCGGGAATATTGA
GAATGGTAAAGACAAAAGGTATAATAAATGATAATAATAACAAAACACAGAGCTTTGTACCTCA
ATAATCTCTTTCATCCATGGTTCCTAGGGCACTTTATAGACTAATAATACCTACTCTGGTACTC
ACATACCACCTTTTATCTAAGGACTGCAGGCACTTTCACAACACTCTCACGATGCAGGAAGTAT
TATTATCCCCATTTTATATGTAAGTAAACAGAGGCACAAAAGTTAAGCAACTTGCCCAAAGCCA

FIG. 15A

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CACAAGTCAGTAGCAGCCAAAATTCCTGACTCAGAACCTATTAACACTAAGAGAACTGGTCTAA
GCCATGCAGTGATAAATTTATGTGGGGTGTTATCCTAGTTCATTCAAAGTCTATCGTTTTTAGG
CTGATATTGTATATTCAATACCCCATCTGTTATAATTTCCTCTTCTCCCATACACTTCTTAGAG
ACCAAGGACTTTAAGCCCCTAGAAGGGACTATGTTTACTGAGTGCCTTCCTCGAATCAAGCACA
TTTTATGTGCAGTGTCAGTTCTTAAGACAGCTTAAATATAATGTAATTGGGAGGCTGAGAGCAG
GAGAATTGCTTGAACTCAGGAGGCGGAGGTTGCAGTGAGCTGAGATCCCGCCACTGCACTCCAG
CCTGGCGACAGAGCGAGACTCCGCCTCAAAAAAAAAAAAAAATGTAATTTTTGCTGATTTTATAG
TACAGAAAGCTGAGTACCAGATAATGTAAACATGCCCAAGATCTCTCAGCTAGCTGACTATTCC
CTCTTTCCACTATATCCTGCAGCCCTTCCAGGAGAAAAGTCCTCTGATAAGTTACAAAGCATAT
GAATGTGAATACGTTTAATGTCCCAGCCTCCCTTACTCTCCTTAAAACTCAGAAAACAAACTAA
TGAATATGTAATTGAGAAACTTCAGGTGGCACACTGGGGTTGGTACTAGCTTAGGTAAACAGCC
GCTCAGCCTTTTAGACCTATTCCCAACAAAAGCTTTTAATTTTCTAAGGATTTTTCCAGAGCTC
TCGCCATACGTTTCCCACAACAGCCAGACCAAAGACCAAAACTGTCTTTCCCTGAGAAATATAG
AGCATGTGAATCACTTTCTTCTGTTCCCAGTTCTGTGGCAGGCAAACACTGATTGCTCACTCAT
CATGTGCTACCTGGGCAAAACAGGAATATTAAGTAGGAAGAAAGGTTTATGTTAGGTAAGAGCG
TGACTTAGGGCTCTCCTACTTTTTTACAAAATGGAGACCTGGCATTTGTAGCCTCCCACAATGA
TGTGCCCTGACATTACTTGGATATAGAAAGGTCAGTCTTAGGTGCGTCAGTGACAGCCCACCCC
GCTCTGATCCAGAAATTTCAGATGACTTGCATCAGAGGATAAGCCTCTGGCATGTTAATAATGA
AAAAATAGAGACAATCACTGCCCCAGCTCATCTCAAATTAGCATCAGTGCAGGGTTAGTACTTT
GGTAGGGAGCTTTGCTGCTAAATTCATTCTCTGTAAAGAGGAGAGGCAGAGACAGGGTTAAGGG
GAAAACTCCAAGACTGGAATCGCCAATACAATAAACTGTCGAACTGAGTTTTTTCTCCCGCAAC
CCTAAGATACTAGTAAGTCCTTCCTCTTAGCCAACCCTTTTCACCAGGGCACCGCAGTTTTCTT
AGAAGGAGGGTGCTGGGTTTGTCTCAGGTCTTTCTATTCTCCTGCCCGCTGCCCTAGTACATCT
GAAAAGGGAGCAGCGACTAGGAAAAGAGACACGTGGGTATTTTCCCATCCTGTCTAGTCATTCC
CTGAATCATCACAAGTTATCGCACTTTTCCCCTTAGCCAGCAGCGTTCGAGACTTTCTCTCAAA
TAATACGGTCTTGTACTTAAAAGGAAGAGTGGTGGGAGAAGAGAGAGGCGGAGAAGACAAGCAA
GAAGGGCGTGGAGTGCCGTTCCCGCCCCGGAGTCGGAGGCGCCGGGAGGCCGGACGCCGCGAAG
CTGCTAGCCCAGGAATGTGCCGTCTAACTCGCAGGCCGCGGGCGGAGCGCGGCGGGCGCGCTGT
GGTCTGCGGCGGGAGCGGGGCAGAGGACGGCTGGCGCAGGGCAGGCTGCAGCGGCGGGCCGGAC
GCGACGCCGCGCACCTGAGCGCCGGGGGCGGGGCGTCAGCGGCCACGACCCTTCCCACCGCGCG
CCGCGCCCCTCGCGCGCCGCCTCGGCCTTTTCCGCTCGTGCTTCGGCGCCGCTCGGCTCCCTTC
CCGCCCCTGGCTCCCTCCCTCCCTCCCTCCCTCCTTCTTCTCCCTCCCTCCTGTCCTGGGATTG
CCTGGAGCTCCGCACCGCGAGTTTGCCGCGGCACTTTCCGCGCGGCGGAAGAGCGCGCGCCAGC
TTCGGCACACCTGGGAGCCGGATCCCAGCCCTACGCCTCGTCCCCTACAAGCTCCTCCAAGGTA
AGGCGCTCGCTCACACCCGGTCCTTTCCACGCTCGGCGGGACAGCTGGGTCCCCGCCTCCTCTG
CGAACCGGCTAGGAGCTCCGCGCCTCGCC**TTGGGAGTGGGGTTGTAGCTGACGGGGACCTCGGA**
CCGGCGGTGGCTAGAGCGCGGAGCAGGCGATACGACGAGCCGACAGGTGGCGGGTCTAGCCCTA
GTATCTCGACCGCCGCCGGCGCGGACCTTGGTGGGGATGGGGCGGGCGGGCCGACTTGGGGGTG
GGGTCAGTCCTCTCTCCTCCCTTCTAGGGGCGGCGATCGTCGGGGTCCGTACTGTAGGTGCGTG
GGAGAAACTTTGCAGGGTGGGGACCCGGCGGCTGCTGGCCGGTAGTGACTGGTGGGCGCGCTCG
AGGACTCCAAGGGGCGCAGCCCGGGGGCAGACCCTTGGGTCGGGCGGGGATCTTACGCTTCCCT
TACCCGCCCCCTTTTGTCTTTCACCTCAGCCCCGCCGGCTGCTGTGGGAGCGGCGGCCGTCCCT
CTCCTGGAGGTCGTCTCCTGGCATCCTCGGGGCCGCAGGAAGGAAGAGGAGGCAGCGGCCGGAG
CCCTGGTGGGCGGCCTGAGGTGAGAGCCCGACCGGCCCCTTTGGGAATATGGCGACCGGTGGCT
ACCGGACCAGCAGCGGCCTCGGCGGCAGCACCACAGACTTCCTGGAGGAGTGGAAGGCGAAACG
CGAGAAG**ATGCGCGCCAAGCAGAACCCCCCGGGCCCGGCCCCCCCGGGAGGGGGCAGCAGCGAC**
GCCGCTGGGAAGCCCCCCGCGGGGGCTCTGGGCACCCCGGCGGCCGC

FIG. 15B